

**What Is Claimed Is:**

1. An isolated nucleic acid molecule comprising a polynucleotide having a nucleotide sequence at least 95% identical to a sequence selected from the group consisting of:

- 5 (a) a nucleotide sequence encoding a polypeptide comprising amino acids from about -19 to about 231 in SEQ ID NO:2;
- (b) a nucleotide sequence encoding a polypeptide comprising amino acids from about -18 to about 231 in SEQ ID NO:2;
- (c) a nucleotide sequence encoding a polypeptide comprising amino acids from about 1 to about 231 in SEQ ID NO:2;
- (d) a nucleotide sequence encoding a polypeptide having the amino acid sequence encoded by the cDNA clone contained in ATCC Deposit No. 97756;
- (e) a nucleotide sequence encoding the mature connective tissue growth factor-3 polypeptide having the amino acid sequence encoded by the cDNA clone contained in ATCC Deposit No. 97756; and
- (f) a nucleotide sequence complementary to any of the nucleotide sequences in (a), (b), (c), (d), or (e).

20 2. The nucleic acid molecule of claim 1, wherein said polynucleotide has the nucleotide sequence of the cDNA clone contained in ATCC Deposit No. 97756.

25 3. The nucleic acid molecule of claim 1, wherein said polynucleotide has the nucleotide sequence encoding the connective tissue growth factor-3 polypeptide having the amino acid sequence encoded by the cDNA clone contained in ATCC Deposit No. 97756.

4. The nucleic acid molecule of claim 1, wherein said polynucleotide has the nucleotide sequence encoding the mature connective tissue growth factor-3 polypeptide having the amino acid sequence encoded by the cDNA clone contained in ATCC Deposit No. 97756.

5 5. An isolated nucleic acid molecule, comprising a polynucleotide which hybridizes under stringent hybridization conditions to a polynucleotide having a nucleotide sequence identical to a nucleotide sequence in (a), (b), (c), (d), (e), or (f) of claim 1, wherein said polynucleotide which hybridizes does not hybridize under stringent hybridization conditions to a polynucleotide having a nucleotide sequence consisting of only A residues or of only T residues.

10 6. An isolated nucleic acid molecule comprising a polynucleotide which encodes the amino acid sequence of an epitope-bearing portion of a connective tissue growth factor-3 polypeptide having an amino acid sequence in (a), (b), (c), (d), (e), or (f) of claim 1.

15 7. The isolated nucleic acid molecule of claim 6, which encodes an epitope-bearing portion of a connective tissue growth factor-3 polypeptide selected from the group consisting of: a polypeptide comprising amino acid residues from about 36 to about 49 in SEQ ID NO:2; a polypeptide comprising amino acid residues from about 75 to about 109 in SEQ ID NO:2; a polypeptide comprising amino acid residues from about 115 to about 139 in SEQ ID NO:2; and a polypeptide comprising amino acid residues from about 196 to about 230 in SEQ ID NO:2.

20 8. An isolated nucleic acid molecule, comprising a polynucleotide having a sequence selected from the group consisting of:

25 (a) a nucleotide sequence of a fragment of the sequence comprising nucleotides 1-231 of SEQ ID NO:1, wherein said fragment comprises

at least 50 contiguous nucleotides, provided that said isolated nucleic acid molecule does not have the sequence shown in SEQ ID NO: 11, or a subfragment thereof; and

- 5           (b)     a nucleotide sequence complementary to a nucleotide sequence in (a).

9.       A method for making a recombinant vector, comprising inserting an isolated nucleic acid molecule of claim 1 into a vector.

10.      A recombinant vector produced by the method of claim 9.

11.      A method of making a recombinant host cell comprising introducing the recombinant vector of claim 10 into a host cell.

12.      A recombinant host cell produced by the method of claim 11.

13.      A recombinant method for producing a connective tissue growth factor-3 polypeptide, comprising culturing the recombinant host cell of claim 12 under conditions such that said polypeptide is expressed and recovering said polypeptide.

15           14.     An isolated connective tissue growth factor-3 polypeptide having an amino acid sequence at least 95% identical to a sequence selected from the group consisting of:

- 20           (a)     amino acids from about -19 to about 231 in SEQ ID NO:2;  
              (b)     amino acids from about -18 to about 231 in SEQ ID NO:2;  
              (c)     amino acids from about 1 to about 231 in SEQ ID NO:2;  
              (d)     the amino acid sequence of the connective tissue growth factor-3 polypeptide having the amino acid sequence encoded by the cDNA clone contained in ATCC Deposit No. 97756;

- (e) the amino acid sequence of the mature connective tissue growth factor-3 polypeptide having the amino acid sequence encoded by the cDNA clone contained in ATCC Deposit No. 97756; and

(f) the amino acid sequence of an epitope-bearing portion of any one of the polypeptides of (a), (b), (c), (d), or (e).

15. An isolated polypeptide of claim 14, comprising an epitope-bearing portion of connective tissue growth factor-3, wherein said portion is selected from the group consisting of: a polypeptide comprising amino acid residues from about 36 to about 49 in SEQ ID NO:2; a polypeptide comprising amino acid residues from about 75 to about 109 in SEQ ID NO:2; a polypeptide comprising amino acid residues from about 115 to about 139 in SEQ ID NO:2; and a polypeptide comprising amino acid residues from about 196 to about 230 in SEQ ID NO:2.

16. The isolated polypeptide of claim 14, which is produced or contained in a recombinant host cell.

17. The isolated polypeptide of claim 16, wherein said recombinant host cell is mammalian.

18. An isolated nucleic acid molecule comprising a polynucleotide encoding a connective tissue growth factor-3 polypeptide wherein, except for one to fifty conservative amino acid substitution, said polypeptide has a sequence selected from the group consisting of:

- (a) a nucleotide sequence encoding a polypeptide comprising amino acids from about -19 to about 231 in SEQ ID NO:2;
  - (b) a nucleotide sequence encoding a polypeptide comprising amino acids from about -18 to about 231 in SEQ ID NO:2;

(c) a nucleotide sequence encoding a polypeptide comprising amino acids from about 1 to about 231 in SEQ ID NO:2;

5 (d) a nucleotide sequence encoding a polypeptide having the amino acid sequence encoded by the cDNA clone contained in ATCC Deposit No. 97756;

10 (e) a nucleotide sequence encoding the mature connective tissue growth factor-3 polypeptide having the amino acid sequence encoded by the cDNA clone contained in ATCC Deposit No. 97756; and

15 (f) a nucleotide sequence complementary to any of the nucleotide sequences in (a), (b), (c), (d), or (e).

19. An isolated connective tissue growth factor-3 polypeptide wherein except for one to fifty conservative amino acid substitutions, said polypeptide has a sequence selected from the group consisting of:

20 (a) amino acids from about -19 to about 231 in SEQ ID NO:2;  
(b) amino acids from about -18 to about 231 in SEQ ID NO:2;  
(c) amino acids from about 1 to about 231 in SEQ ID NO:2;  
(d) the amino acid sequence of the connective tissue growth factor-3 polypeptide having the amino acid sequence encoded by the cDNA clone contained in ATCC Deposit No. 97756;

25 (e) the amino acid sequence of the mature connective tissue growth factor-3 polypeptide having the amino acid sequence encoded by the cDNA clone contained in ATCC Deposit No. 97756; and

(f) the amino acid sequence of an epitope-bearing portion of any one of the polypeptides of (a), (b), (c), (d), or (e).

20. An isolated antibody or antibody fragment that binds specifically to a connective tissue growth factor-3 polypeptide of claim 14.

21. A method for treating an individual in need of a decreased level of connective tissue growth factor-3 activity, comprising administering to said individual a composition comprising the isolated antibody or antibody fragment of claim 20.

5        22. A method for treating an individual in need of an increased level of connective tissue growth factor-3 activity, comprising administering to said individual a composition comprising the isolated connective tissue growth factor-3 polypeptide of claim 14.

10        23. A diagnostic method, comprising:  
                  (a) assaying connective tissue growth factor-3 gene expression level in mammalian cells or body fluid; and  
                  (b) comparing said connective tissue growth factor-3 gene expression level with a standard connective tissue growth factor-3 gene expression level, whereby an increase or decrease in said connective tissue growth factor-3 gene expression level compared to said standard is indicative of a connective tissue-related disorder.

15        Add 23